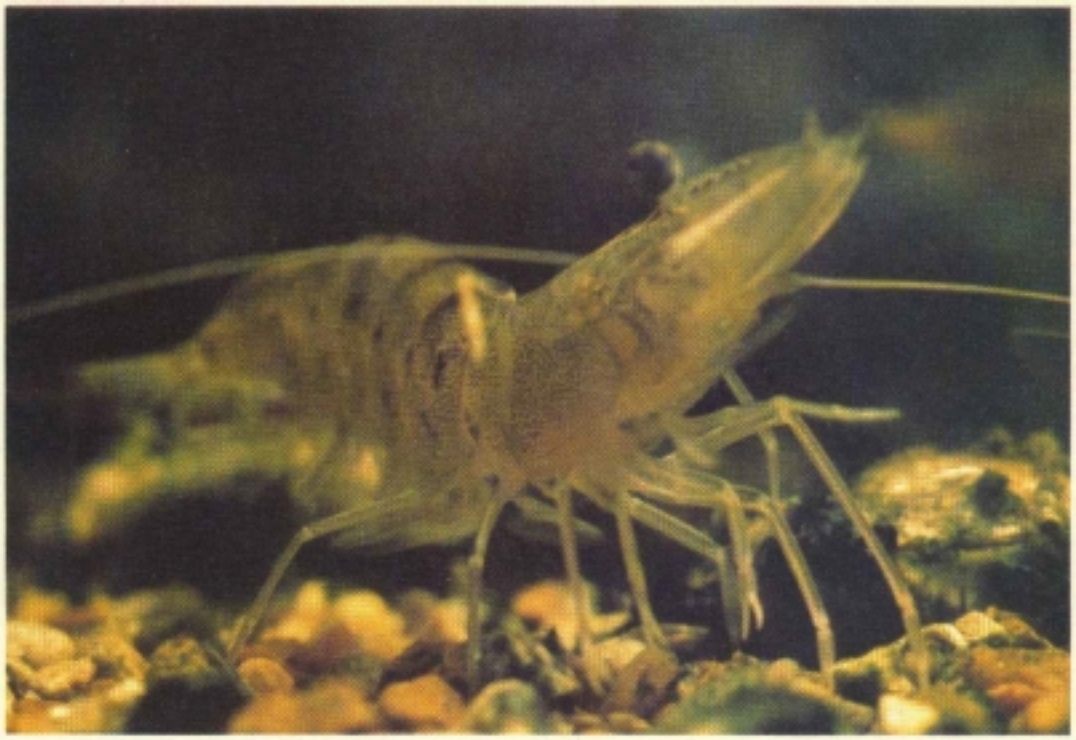

SHRIMP STAINING

A Modern Management Tool

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Gulf of Mexico shrimp catches have increased steadily in recent years and in 1972 Gulf shrimp had a dockside value of $163 million, up sharply from values reported during the early 1960's. This figure represents 84 percent of the value of the total United States shrimp catch during that year. It is obvious that the major shrimp producing area lies in states bordering the Gulf.

The growing importance of the Gulf shrimp fishery has led to increased research and management by state and federal agencies. As part of the research effort, Louisiana Wild Life and Fisheries Commission personnel collaborated recently with National Marine Fisheries Service Researchers in a mark-recapture study of white shrimp in Rockefeller Refuge, Cameron Parish, Louisiana. Participants included Commission personnel from the Division of Oysters, Water Bottoms and Seafoods, Refuge Division, and the Division of Water Pollution Control, and Department of Commerce biologists from the National Oceanic and Atmospheric Administration's Gulf Coastal Fisheries Center Galveston Laboratory of the National Marine Fisheries Service.

Photography by
Lloyd Poissenot

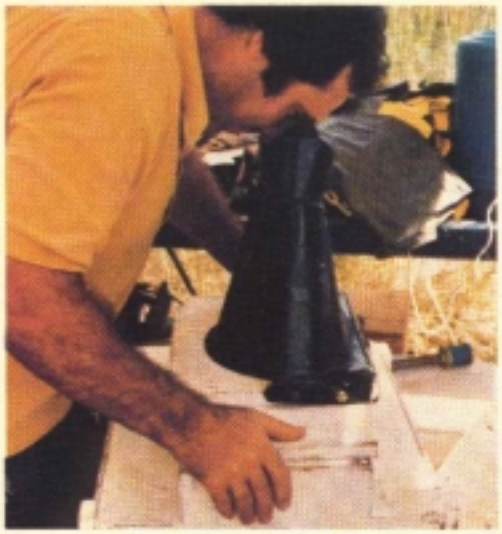
A 10-foot trawl was used to collect the shrimp for marking and for recapture.

A fine mesh net was set across the width of the canal to prevent shrimp from escaping.

This was one of a series of studies designed to estimate population size and rates of harvest, natural mortality, and migration of shrimp. Future plans include further testing the study methods in small estuarine and oceanic areas in which shrimp are fished commercially. Such experiments are expected to contribute to wiser management and utilization of shrimp resources.

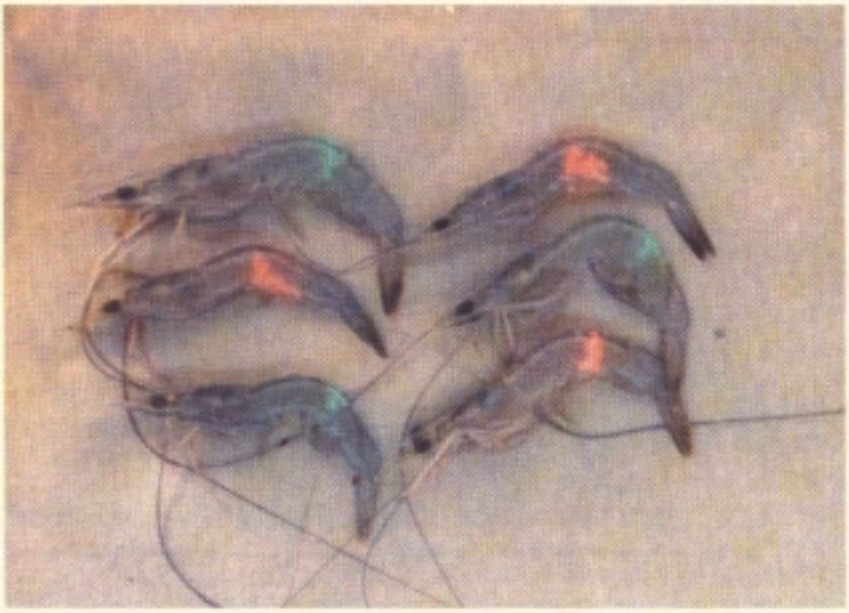
Work began August 6 with assembly of a floating platform in a tidal marsh canal that had been blocked off with netting to prevent the shrimp from escaping during the study. Operating from

Marking the tail section of a white shrimp with a non-toxic fluorescent green pigment.



Upon recapture, the shrimp were examined under blacklight to determine marked from unmarked.

Red pigment is very visible even to the naked eye.



View of marked shrimp as biologists saw them in blacklight.

the platform and from small boats, personnel collected juvenile white shrimp and marked them with non-toxic red and green flourescent pigments. There were 1,000 white shrimp marked with the red pigment and 1,500 white shrimp marked with the green pigment. On August 7, shrimp marked with the red pigment were released on the western end of the canal; those marked with the green pigment were released on the eastern end of the canal. During the next three days, a series of tows was made with a trawl to capture shrimp in the canal. All shrimp caught were examined under blacklight to distinguish marked from unmarked shrimp. Of the shrimp taken in the trawl tows, 183 had been marked with the red pigment and 144 marked with the green pigment. From these catches, we estimated that the population of shrimp in the blocked off portion of the canal was approximately 42,000 or 6,400 per acre. Movement of shrimp within the canal was fairly heavy, with approximately 12,000 shrimp moving from west to east, and approximately 5,600 shrimp moving from east to west. Further analyses of the data are being conducted with computer to determine shrimp movements and natural and fishing mortality.

The Louisiana Wild Life and Fisheries Commission, as a member of the Gulf States Marine Fisheries Commission (an interstate compact formed in 1949), cooperates with the fishing industry, other state conservation agencies, and the National Marine Fisheries Service in fostering and promoting proper management and utilization of our fishery resources.